



US006432055B1

(12) **United States Patent**  
**Carp et al.**

(10) **Patent No.:** **US 6,432,055 B1**  
(45) **Date of Patent:** **Aug. 13, 2002**

(54) **MEDICAL ULTRASONIC IMAGING SYSTEM WITH THREE-STATE ULTRASONIC PULSE AND IMPROVED PULSE GENERATOR**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 97 days.

(21) Appl. No.: **09/607,806**

(22) Filed: **Jun. 30, 2000**

(51) Int. Cl.<sup>7</sup> ..... **A61B 8/00**

(52) U.S. Cl. .... **600/437**

(58) **Field of Search** ..... 600/437, 442, 600/443, 447, 448; 604/22; 73/602, 603, 614, 625, 626; 367/7, 11, 130, 138, 153, 2; 310/317, 316.01

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Fig. A1–A15 illustrating transmit waveforms (Dec., 1998).  
Fig. B1–B3 illustrating transmit waveforms (Nov., 1998).  
Fig. C1–C7 illustrating transmit waveforms (Nov., 1998).  
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(57) **ABSTRACT**

A three-state, pulse width modulated, bipolar waveform is constructed by summing a first component with an inverted, time-shifted version of the first component. By properly selecting the time interval for the time shift of the second component, frequency filtering benefits can be obtained. The three-state waveform is generated by a switched voltage source that provides a low, constant source impedance for all three voltage states.

**57 Claims, 13 Drawing Sheets**

